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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,725	11/21/2003	Frank-Dieter Zimmermann	FA1094USNA	3167

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E I DU PONT DE NEMOURS AND COMPANY		
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EXAMINER	
TSOY, ELENA	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
10/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

Office Action Summary	Application No. 10/719,725	Applicant(s) ZIMMERMANN ET AL.	
	Examiner Elena Tsoy	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-11 is/are pending in the application.
4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The Examiner Note: Applicants are advised to refer to *correct* SN 10/719,725 (not 10/719,275).

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 15, 2007 has been entered.

Response to Amendment

Amendment filed on September 17, 2007, 2007 has been entered. Claims 2, 5, 12 have been cancelled. Claims 1, 3, 4, 6-11 are pending in the application. Claim 9 is withdrawn from consideration as directed to a non-elected invention.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 4, 6-8, and 10-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 recites "material which absorbs high-energy radiation within a wavelength in the range of 250 to 2,500

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nm and having heating rates of **more** than 50⁰C per second”, claim 4 recites “**more** than 65⁰C per second”, and claim 8 recites “**more** than 1 W/cm²”, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention because it is hardly possible to have material having heating rates of **unlimited** degree C per second or **unlimited intensity**.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Rejection of claims 1, 3-4, 6-8, 10-11 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to amendment.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-4, 7-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of art in view of Blatter et al (WO 99/41323), further in view of Nickerson (US 3,860,506), and further in view of Dalton (US 3,263,604).

The Examiner Note: instead of WO 99/41323 in German, the Examiner cited US 6,406,757 of the same patent family.

Applicants admitted that applying a powder coating by *electrostatical forces* (See P3) to non-metallic substrates is much more difficult than coating metallic substrates with powder coatings due to the insufficient surface conductivity of the substrate and inefficient grounding of the substrate, and as a result, the powder coating is deposited unevenly and the adhesion of the powder coating to the substrate is poor (See P5). It is known to pre-treat *wood*-based substrates with a liquid conductive primer prior to the application of a **powder** (See P6).

Applicants admitted that the prior art fails to teach that the powder coating applied on the *wood*-based substrate is formed from a powder, which can be melted and cured with NIR (Claim 1); wherein NIR irradiation at a wavelength between 800 and 1200 nm and with an intensity of more than 1 W/cm² is used to melt and cure the coating composition (Claim 8).

Blatter et al teach a powder coating composition, which is suitable for *electrostatical* coating (See column 4, lines 59-60) temperature-sensitive non-metallic substrates such as **wood** by melting and curing an applied coating with NIR (See Abstract; column 5, lines 21-36) at frequencies of 750-12000 nm (See column 5, lines 1-4) and a power of e.g. more than 1 W/cm² (See column 5, lines 13-15).

It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a powder coating composition of Blatter et al for coating *wood*-based substrates in Applicant's admitted state of art primed with a conductive coating, by melting and curing with NIR since Blatter et al teach a powder coating composition, which is suitable for

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coating temperature-sensitive non-metallic substrates such as **wood** by melting and curing an applied coating with NIR.

Applicant's admitted state of art in view of Blatter et al fails to teach that the material is selected from the group consisting of carbon, magnetite, iron oxide, iron oxide black, tin oxide and antimony oxide (Claims 1, 2) or carbon or graphite (Claim 3)

Nickerson teaches that a *graphite* coating may be used to provide a superior conductive base for electrostatic deposition on non-conductive bodies (See column 4, lines 23-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a *graphite* coating in Applicant's admitted state of art in view of Blatter et al instead of liquid conductive primer with the expectation of providing the desired superior conductive base for electrostatic deposition on non-conductive wood based substrates, as taught by Nickerson.

The above cited prior art fails to teach that carbon may be used instead of graphite.

Dalton teaches that **carbon** black or graphite can be used for coating non-conductive material to render the material electrically conductive (See column 3, lines 11-16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used carbon black in the cited prior art instead of graphite with the expectation of providing a non-conductive material with the desired electrical conductivity since Dalton teaches that carbon black is functionally equivalent to graphite for coating a non-conductive material to render a non-conductive material electrically conductive.

The Examiner takes official notice that carbon *inherently* absorbs high-energy radiation within a wavelength in the range of 250 to 2,500 nm and is capable of having heating rates of more than 50°C per second.

As to claim 11, the limitations of claim 11 are not addressed because they are directed to a non-elected substrate.

7. Claims 1, 3-4, 6-8, and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of art in view of Blatter et al, further in view of Nickerson, and further in view of Dalton, and further in view of Honda et al (US 6,800,374).

The cited prior art is applied here for the same reasons as above. The cited prior art fails to teach that the covering step is realized with a layer thickness in the range of 0.5 to 1 microns (Claim 6).

The Examiner takes official notice that it is a common knowledge in the art that electric resistivity of an electroconductive layer depends on the thickness of the layer, as evidenced by Honda et al (See column 11, lines 54-65). It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant thickness parameters (including those of claimed invention) in the cited prior art through routine experimentation in the absence of showing of criticality.

The Examiner takes official notice that carbon layer having thickness in claimed range *inherently* absorbs high-energy radiation within a wavelength in the range of 250 to 2,500 nm and is capable of having heating rates of more than 50°C per second.

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Response to Arguments

8. Applicant's arguments with respect to previously cited prior art have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is 571-272-1429. The examiner can normally be reached on Monday-Thursday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy, Ph.D.
Primary Examiner
Art Unit 1792

ELENA TSOY
PRIMARY EXAMINER



October 23, 2007